



PATENT

Attorney Docket No. 056291-5281

#### IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| In re Application of: CAULKETT et al.    | ) Confirmation No.: 9582            |
|--|-------------------------------------|
| Application No.: 10/578,021              | ) Group Art Unit: <i>Unassigned</i> |
| Filed: <b>April 28, 2006</b>             | Examiner: Unassigned                |
| For: PYRIDINE CARBOXYLIC ACID            | )                                   |
| DERIVATIVES AS GLUCOKINASE<br>MODULATORS | ) Date: May 2, 2007                 |

Commissioner for Patents
U.S. Patent and Trademark Office
Customer Window, Mail Stop Amendment
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir:

# SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

#### **UNDER 37 C.F.R. § 1.97(b)**

## Citation of Technically Related U.S. Patent Applications

The Examiner's attention is directed to the following technically related U.S. patents or applications of Applicants' assignee:

| Inventor                             | U.S. Serial No.   | U.S. Patent No. | PCT Publication No.  |
|--------------------------------------|-------------------|-----------------|----------------------|
|                                      | Filing Date       | Issue Date      | PCT Publication Date |
| Barry Raymond Hayter et al.          | 10/482,264        |                 | WO 03/000262         |
|                                      | December 23, 2005 |                 | January 3, 2003      |
| Scott Boyd et al.                    | 10/486,496        |                 | WO 03/15774          |
|                                      | February 11, 2004 |                 | February 27, 2003    |
| Darren Mckerrecher et al.            | 10/534,650        |                 | WO 2004/046139       |
|                                      | May 12, 2005      |                 | June 3, 2004         |
| Rodney Brian Hargreaves et al.       | 10/534,651        |                 | WO 2004/045614       |
|                                      | May 12, 2005      |                 | June 3, 2004         |
| Craig Johnstone et al.               | 10/579,337        |                 | WO 2005/054200       |
|                                      | May 15, 2006      |                 | June 16, 2005        |
| Craig Johnstone et al.               | 10/579,552        |                 | WO 2005/054233       |
|                                      | May 16, 2006      |                 | June 16, 2005        |
| Peter William Rodney Caulkett et al. | 10/579,782        |                 | WO 2005/056530       |
|                                      | May 18, 2006      |                 | June 23, 2005        |

| Inventor                    | U.S. Serial No. U.S. Patent | No. PCT Publication No. |
|-----------------------------|-----------------------------|-------------------------|
|                             | Filing Date Issue Date      | PCT Publication Date    |
| Craig Johnstone et al.      | 10/588,315                  | WO 2005/080360          |
|                             | August 3, 2006              | September 1, 2005       |
| Craig Johnstone et al.      | 10/588,334                  | WO 2005/080359          |
|                             | August 3, 2006              | September 1, 2005       |
| Craig Johnstone et al.      | 11/628,448                  | WO 2005/121110          |
|                             | December 4, 2006            | December 22, 2005       |
| Barry Raymond Hayter et al. | 11/634,966                  | WO 03/000267            |
|                             | December 7, 2006            | January 3, 2003         |
| Philip Cornwall et al.      | 11/665,247                  | WO 2006/040527          |
| _                           | April 12, 2007              | April 20, 2006          |
| Craig Johnstone et al.      | 11/665,163                  | WO 2006/040528          |
|                             | April 12, 2007              | April 20, 2006          |
| Craig Johnstone et al.      | 11/665,222                  | WO 2006/040529          |
|                             | April 12, 2007              | April 20, 2006          |

With the exception of the documents listed in the table above in bold (for which a copy was provided with the previously filed Information Disclosure Statement), a copy of the specification and claims for each application, in the form of the published PCT application from which such application was filed is being filed herewith. Consideration of each listed application is earnestly solicited

Pursuant to 37 C.F.R. §§ 1.56 and 1.97(b), Applicants request the Examiner to consider this Information Disclosure Statement and the documents listed on the attached Form PTO-1449. To the best of the undersigned's knowledge, this Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits for the above-referenced application. Accordingly, Applicants do not believe a fee is due for filing this Information Disclosure Statement.

With the exception of U.S. Patents and Publications, copies of the listed documents are attached. Applicants respectfully request that the Examiner initial and return the Form PTO-1449, indicating that the information has been considered and made of record herein.

This submission does not represent that a search has been made or that no better art exists and does not constitute an admission that each or all of the listed documents are material or constitute "prior art." Applicants reserve the right to take appropriate action to establish the patentability of the disclosed

Attorney Docket No.: 056291-5281 Application No. 10/578,021

Page 3

invention over the listed documents, should one or more of the documents be applied against the claims of

the present application.

Except for issue fees payable under 37 C.F.R. §1.18, the Commissioner is hereby authorized by

this paper to charge any additional fees during the entire pendency of this application including fees due

under 37 C.F.R. §§1.16 and 1.17 which may be required, including any required extension of time fees, or

credit any overpayment to Deposit Account No. 50-0310. This paragraph is intended to be a

CONSTRUCTIVE PETITION FOR EXTENSION OF TIME in accordance with 37 C.F.R.

§1.136(a)(3).

Respectfully Submitted,

Morgan Lewis & Bockius LLP

Date:

May 2, 2007

Morgan Lewis & Bockius LLP

Customer No. 09629

1111 Pennsylvania Avenue, N.W.

Washington, D.C. 20004

Tel. No.: 202-739-3000

By:

Registration No. 45,397 Tel. No.: (202) 739-5734

Fax No.: (202) 739-3001

# INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Attorney Docket No. **056291-5281** 

MAY 0 2 2007 Application No. 10/578,021

Applicants: CAULKETT et al.

PTO Form 1449 May 2, 2007

Filing Date: April 28, 2006

Group Art Unit: Unassigned

| TIC  | DAT | DATE    | DOC | TIN ALTON | MITTE |
|------|-----|---------|-----|-----------|-------|
| U.S. | PAI | P.IN.I. | DOC | UIVIELI   | N 1 5 |

| Initial | Ţ   | Document No.   | Date              | Name                       | Class | Sub-Class | Filing Date |
|---------|-----|----------------|-------------------|----------------------------|-------|-----------|-------------|
|         | 1.  | US 2001-027200 | October 4, 2001   | De la Brouse-Elwood et al. |       |           |             |
|         | 2.  | US 3,950,351   | April 13, 1976    | Rossignol et al.           |       |           |             |
|         | 3.  | US 4,146,631   | March 27, 1979    | Ford et al.                |       |           |             |
|         | 4.  | US 5,258,407   | November 2, 1993  | Washburn et al.            |       |           |             |
|         | 5.  | US 5,466,715   | November 14, 1995 | Washburn et al.            |       |           |             |
|         | 6.  | US 6,110,945   | August 29, 2000   | Head et al.                |       |           |             |
|         | 7.  | US 6,200,995   | March 13, 2001    | De la Brouse-Elwood et al. |       |           |             |
|         | 8.  | US 6,207,693   | March 27, 2001    | Setoi et al.               |       |           |             |
|         | 9.  | US 6,316,482   | November 13, 2001 | Setoi et al.               |       |           |             |
|         | 10. | US 6,369,229   | April 9, 2002     | Head et al.                |       |           |             |
|         |     |                |                   |                            |       |           |             |

#### FOREIGN PATENT DOCUMENTS

|   |     | Document No. | Date              | Country        | Class | Sub-Class | Translation |
|---|-----|--------------|-------------------|----------------|-------|-----------|-------------|
|   | 11. | EP 0619116   | October 12, 1994  | Europe         |       |           |             |
|   | 12. | EP 1048659   | November 2, 2000  | Europe         |       |           | - "         |
|   | 13. | EP 1336607   | August 20, 2003   | Europe         |       |           |             |
|   | 14. | EP 1496052   | January 12, 2005  | Europe         |       |           |             |
|   | 15. | EP 1600442   | November 30, 2005 | Europe         |       |           |             |
|   | 16. | GB 2331748   | June 2, 1999      | United Kingdom |       |           |             |
|   | 17. | GB 2385328   | August 20, 2003   | United Kingdom |       |           |             |
|   | 18. | JP 08143565  | June 4, 1996      | Japan          |       |           | Yes         |
|   | 19. | JP 08173525  | July 9, 1996      | Japan          |       |           | Yes         |
|   | 20. | JP 08301760  | November 19, 1996 | Japan          |       |           | Yes         |
|   | 21. | JP 11171848  | June 29, 1999     | Japan          |       | ;         | Yes         |
|   | 22. | JP 57021320  | February 4, 1982  | Japan          |       |           | Yes         |
|   | 23. | JP 58069812  | April 26, 1983    | Japan          |       |           | Yes         |
|   | 24. | WO 95/20578  | August 3, 1995    | WIPO           |       |           |             |
|   | 25. | WO 96/22282  | July 25, 1996     | WIPO           |       |           |             |
|   | 26. | WO 96/22293  | July 25, 1996     | WIPO           |       |           |             |
|   | 27. | WO 96/22294  | July 25, 1996     | WIPO           |       |           |             |
|   | 28. | WO 96/22295  | July 25, 1996     | WIPO           |       |           |             |
|   | 29. | WO 96/36619  | November 21, 1996 | WIPO           |       |           | Yes         |
|   | 30. | WO 96/41795  | December 27, 1996 | WIPO           |       |           |             |
|   | 31. | WO 97/49707  | December 31, 1997 | WIPO           |       |           |             |
|   | 32. | WO 97/49708  | December 31, 1997 | WIPO           |       |           |             |
|   | 33. | WO 98/24771  | June 11, 1998     | WIPO           |       |           |             |
|   | 34. | WO 98/45242  | October 15, 1998  | WIPO           |       |           | Yes         |
| Ï | 35. | WO 99/24415  | May 20, 1999      | WIPO           |       |           | Yes         |
|   | 36  | WO 99/38845  | August 5, 1999    | WIPO           |       |           |             |

# OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

Examiner

Date Considered

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

## INFORMATION DISCLOSURE CITATION

(Use several sheets if necessary)

Attorney Docket No. 056291-5281

Application No. 10/578,021

Applicants: CAULKETT et al.

PTO Form 1449 May 2, 2007

Filing Date: April 28, 2006

Group Art Unit: Unassigned

#### FOREIGN PATENT DOCUMENTS

| 1  | Document No.      | Date               | Country | Class | Sub-Class      | Translation |
|----|-------------------|--------------------|---------|-------|----------------|-------------|
| 3  | 7. WO 99/62901    | December 9, 1999   | WIPO    |       |                |             |
| 3  | 8. WO 00/02850    | January 20, 2000   | WIPO    |       |                | Yes         |
| 3  | 9. WO 00/26202    | May 11, 2000       | WIPO    |       |                |             |
| 4  | 0. WO 00/58293    | October 5, 2000    | WIPO    |       |                |             |
| 4  | 1. WO 01/12621    | February 22, 2001  | WIPO    |       |                |             |
| 4  | 2. WO 01/16097    | March 8, 2001      | WIPO    |       |                |             |
| 4. | 3. WO 01/19788    | March 22, 2001     | WIPO    |       |                |             |
| 4  | 4. WO 01/20327    | March 22, 2001     | WIPO    |       |                |             |
| 4  | 5. WO 01/44216    | June 21, 2001      | WIPO    |       |                |             |
| 4  | 6. WO 01/83465    | November 8, 2001   | WIPO    |       |                |             |
| 4  | 7. WO 01/83478    | November 8, 2001   | WIPO    |       |                |             |
| 4  |                   | November 15, 2001  | WIPO    |       |                |             |
| 4  |                   | November 15, 2001  | WIPO    |       |                |             |
| 5  |                   | January 31, 2002   | WIPO    |       |                |             |
| 5  |                   | February 21, 2002  | WIPO    |       |                |             |
| 5  |                   | June 13, 2002      | WIPO    |       |                |             |
| 5  |                   | June 20, 2002      | WIPO    |       |                |             |
| 5  |                   | January 3, 2003    | WIPO    |       |                |             |
| 5  |                   | June 12, 2003      | WIPO    |       |                |             |
| 5  |                   | July 10, 2003      | WIPO    |       |                |             |
|    | 7. WO 03/066613   | August 14, 2003    | WIPO    |       |                |             |
| 5  |                   | October 2, 2003    | WIPO    |       |                | Yes         |
| 5  |                   | November 20, 2004  | WIPO    |       |                |             |
| 6  |                   | November 27, 2004  | WIPO    | 1     |                | Yes         |
| 6  |                   | January 1, 2004    | WIPO    |       |                |             |
| 6  |                   | April 15, 2004     | WIPO    |       | - l            |             |
|    | 3. WO 2004/045614 | June 3, 2004       | WIPO    | -     | - <del> </del> |             |
| 6  |                   | June 3, 2004       | WIPO    |       |                |             |
| 6  |                   | June 17, 2004      | WIPO    |       |                |             |
| 6  |                   | June 24, 2004      | WIPO    |       |                |             |
| 6  |                   | July 29, 2004      | WIPO    |       |                |             |
| 6  |                   | July 29, 2004      | WIPO    |       |                |             |
| 6  |                   | August 26, 2004    | WIPO    |       |                |             |
|    | 0. WO 2004/072066 | August 26, 2004    | WIPO    |       |                |             |
|    | 1. WO 2004/081001 | September 23, 2004 | WIPO    |       |                | Yes         |
|    | 2. WO 2004/110375 | December 23, 2004  | WIPO    |       |                |             |
|    | 3. WO 2005/049019 | June 2, 2005       | WIPO    |       |                |             |
|    | 4. WO 2005/054200 | June 16, 2005      | WIPO    |       |                |             |
|    | 5. WO 2005/054233 | June 16, 2005      | WIPO    |       |                |             |
|    | 6. WO 2005/056530 | June 23, 2005      | WIPO    |       |                |             |

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, etc.)

Examiner

Date Considered

Examiner: Initial if reference considered, whether or not citation is in conformance with MPEP 609; draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

| INFORMATION DISCLOSURE CITATION |            |   |                                      | Attorney Docket No. <b>056291-5281</b> |   |             | plication No.<br>0/578,021                        |                          |  |
|---------------------------------|------------|---|--------------------------------------|--|---|-------------|---|--------------------------|--|
|                                 | (U         | se several sheets if nece                     | essary)                              | App                                    | Applicants: CAULKETT et al.                           |             |   |                          |  |
|                                 |            | PTO Form 1449<br>May 2, 2007                  |                                      |  | Filing Date: April 28, 20                             | 006         | Group Ar  | t Unit: Unassigned       |  |
|                                 |            |   | U.S. PA                              | TEN'                                   | T DOCUMENTS   |             |   |                          |  |
| Initial                         |            | Document No.                                  | Date                                 |  | Name  | Class       | Sub-Class   | Filing Date              |  |
|                                 |            |   |                                      |  |   | <u> </u>    |   |                          |  |
|                                 |            |   | FOREIGN                              | РАТ                                    | ENT DOCUMENTS   |             |   |                          |  |
|                                 |            | Document No.                                  | Date                                 | 1                                      | Country   | Class       | Sub-Class   | Translation              |  |
|                                 | 77.        | WO 2005/063738                                | July 14, 2005                        |  | WIPO  |             |   | Yes                      |  |
|                                 | 78.        | WO 2005/066145                                | July 21, 2005                        |  | WIPO  |             |   |                          |  |
|                                 | 79.        | WO 2005/080359                                | September 1, 200                     |  | WIPO  |             |   |                          |  |
|                                 | 80.        | WO 2005/080360                                | September 1, 200                     |  | WIPO  |             |   |                          |  |
|                                 | 81.        | WO 2005/090332                                | September 29, 200                    |  | WIPO  |             |   | Yes                      |  |
|                                 | 82.        | WO 2005/095417                                | October 13, 2005                     |  | WIPO  |             | -   |                          |  |
|                                 | 83.        | WO 2005/095418                                | October 13, 2005                     |  | WIPO  |             | <del>                                      </del> |                          |  |
|                                 | 84.        | WO 2005/103021                                | November 3, 200                      |  | WIPO  |             | +   |                          |  |
|                                 | 85.<br>86. | WO 2005/121110                                | December 22, 200                     |  | WIPO<br>WIPO  |             | -   |                          |  |
|                                 | 87.        | WO 2005/123132<br>WO 2006/016174              | December 29, 200<br>February 16, 200 | $\overline{}$                          | WIPO  |             | +   |                          |  |
|                                 | 88.        | WO 2006/016174<br>WO 2006/016178              | February 16, 2000                    |  | WIPO  |             | +   |                          |  |
|                                 | 89.        | WO 2006/016178                                | February 16, 200                     |  | WIPO  |             | +   |                          |  |
|                                 | 90.        | WO 2006/040527                                | April 20, 2006                       | 0                                      | WIPO  |             | <del> </del>                                      |                          |  |
|                                 | 91.        | WO 2006/040528                                | April 20, 2006                       |  | WIPO  |             |   |                          |  |
|                                 | 92.        | WO 2006/040529                                | April 20, 2006                       |  | WIPO  |             | <del> </del>                                      |                          |  |
|                                 | 93.        | WO 2006/066613                                | June 29, 2006                        |  | WIPO  |             |   |                          |  |
|                                 |            |   |                                      |  |   |             |   |                          |  |
|                                 |            | OTTITE D                                      | OVI CENTRO (T. I                     |  | A di mid D d D  |             | 4 >   |                          |  |
|                                 | 04         |   |                                      |  | Author, Title, Date, Per<br>tory protein is expressed |             |   | alsimana in rot brain" I |  |
|                                 | 94.        | Neurochem. 80(1):45-                          |                                      | eguiai                                 | tory protein is expressed                             | and intera  | cis with gluc                                     | okinase in rat oram J    |  |
|                                 | 95.        |   |                                      | like p                                 | peptide-1 receptor gene in                            | rat brain'  | ' J Neurochei                                     | m. 66(3):920-927         |  |
|                                 | 96.        |   | e mutations, insulin s               | secret                                 | tion, and diabetes mellitu                            | s" Annu.    | Rev. Physiol.                                     | 58:171-186 (1996)        |  |
|                                 | 97.        |   | imulation of Hepatoc                 |  | Blucose Metabolism by N                               |             |   |                          |  |
|                                 | 98.        |   |                                      | ctivity                                | y in patients with type II                            | diabetes"   | Horm Metab  | Res. 27(1):19-22         |  |
|                                 | 99.        | Carroll et al. "The in v                      |                                      |  | ovel Glucokinase activat<br>Essex, UK (2-4 July 200   |             | , Signalling a                                    | and Control,             |  |
|                                 | 100.       |   |                                      |  | 'interet biologique. XVI.                             |             | entre structu                                     | res et activites         |  |
|                                 |            | protozoocides, anthelm                        | ninthiques et mollusc                | icides                                 | s dans la serie du benzam                             | ido-2 nitr  | o-5 thiazole"                                     | European Journal of      |  |
|                                 |            |   |                                      |  | (6): 539-543 (1978) (Trai                             |             |   |                          |  |
|                                 | 101.       | Christesen et al. "The diabetes therapy" Diab |                                      |  | nase mutation (A456V): I 02)                          | mplication  | ns for glucos                                     | e homeostasis and        |  |
|                                 | 102.       |   |                                      |  | rs (GKAs) as novel anti-c                             |             |   |                          |  |
|                                 | 103.       | Coghlan "Small molec<br>Research Seminar (Jur |                                      | ivatoı                                 | rs (GKAs) as novel anti-c                             | liabetic ag | ents" Society                                     | y for Medicines          |  |
| Examiner                        | L          |   | Date C                               | Ongi                                   | dered   |             | •   |                          |  |
| Exammer                         |            |   | Date                                 | ~011 <b>21</b> (                       | ucicu   |             |   |                          |  |
|                                 |            |   |                                      |  | is in conformance with Mext communication to app      |             | draw line th                                      | rough citation if not in |  |

1-WA/2726908.1 3 of 6

| INFORMATION DISCLOSURE CITATION |      |   | Attorney Docket No. Application No. 056291-5281 10/578,021   |   |                       | · <del>-</del> |                |                           |  |
|---------------------------------|------|---|--|---|-----------------------|----------------|----------------|---------------------------|--|
|                                 | (U   | se several sheets if neces                          | ssary)   | Applicants: CAULKETT et al.   |                       |                |                |                           |  |
|                                 |      | PTO Form 1449<br>May 2, 2007                        |  | Fil   | ing Date: April 28, 2 | 2006           | Group A        | rt Unit: Unassigned       |  |
|                                 |      |   | U.S. PA  | TENT I  | OCUMENTS              |                |                |                           |  |
| Initial                         |      | Document No.  | Date   |   | Name                  | Class          | Sub-Class      | Filing Date               |  |
|                                 | L    |   |  |   |                       |                |                |                           |  |
|                                 | 1    | Dan mand Na   |  | PATEN   | T DOCUMENTS           | Class          | Sub Class      | Tuendation                |  |
|                                 |      | Document No.  | Date   |   | Country               | Class          | Sub-Class      | Translation               |  |
|                                 | L    |   |  |   |                       |                |                | 1                         |  |
|                                 | 104  | Cushman et al. "Synthe                              |  |   | thor, Title, Date, Pe |                |                | dine-containing           |  |
|                                 |      | stilbenes and amides" B                             | ioorganic & Medic  | inal Che  | mistry Letters 1(4):2 | 11-214 (19     | 991)           |                           |  |
|                                 | 105. | DeFronzo et al. "The tri<br>(1988)                  | umvirate: ß-cell, m  | uscle, liv  | er. A collusion respo | onsible for    | NIDDM" D       | iabetes 37:667-687        |  |
| ,                               | 106. | Desai et al. "Phenotypic<br>50:2287-2295 (2001)     | correction of diabe  | etic mice   | by adenovirus-medi    | ated glucol    | kinase expres  | ssion" Diabetes           |  |
|                                 | 107. | Ferre et al. "Correction                            | of diabetic alteration   | ns by glu   | cokinase" PNAS US     | SA. 93(14)     | : 7225-7230    | (1996)                    |  |
|                                 | 108. | Ford et al. "Synthesis arylbenzamides and N-(2-     |  |   |                       |                |                |                           |  |
|                                 | 109. | Froguel et al. "Familial<br>New Engl. J. Med. 328:  | hyperglycemia due  |   |                       |                |                |                           |  |
|                                 | 110. | Fujimoto et al. "Admini hyperglycemia in rats"      | stration of D-glucos   |   |                       | ventricle in   | duced feeding  | ng accompanied by         |  |
|                                 | 111. | Gill et al. "Stimulation (November 2005)            | of insulin release by  | a small   | molecule glucokinas   | se activator   | " EASD Isle    | t Study Group Abstract    |  |
|                                 | 112. | Glaser et al. "Familial h<br>Medicine 338(4):226-23 |  | sed by an   | activating glucokin   | ase mutation   | on" The New    | England Journal of        |  |
|                                 | 113. | Grimsby et al. "Alloster (2003)                     | ric activators of gluc   | cokinase:   | potential role in dia | betes thera    | py" Science    | 301(5631):370-373         |  |
|                                 | 114. | Guertin et al. "Small Mo<br>Therapy" Current Medi   |  |   |                       | ering Agen     | ts: A New Pa   | aradigm for Diabetes      |  |
|                                 |      | Kurata et al. "D-Glucos<br>37:615-620 (1986)        |  |   |                       |                |                |                           |  |
|                                 |      | Kurata et al. "Structural                           |  |   |                       |                |                |                           |  |
|                                 | 117. | Leighton et al. "Small n<br>374 (April 2005)        | nolecule glucokinas  | se activat  | ors as novel anti-dia | betic agent    | s" Biocnem     | Soc Trans. 33(Pt 2):371   |  |
|                                 | 118. |   | vin et al. "Brain glucose sensing and body energy homeostasis: role in obesity and diabetes" Am J Physiol. 276   |   |                       |                |                |                           |  |
|                                 | 119. |   | l effects of diet and  | and obesity on high and low affinity sulfonylurea binding sites in the rat br |                       |                |                |                           |  |
|                                 | 120. | Levin et al. "In vivo and                           | et al. "In vivo and in vitro regulation of [3H]glyburide binding to brain sulfonylurea receptors in obesity-prosistant rats by glucose" Brain Research 776(1-2):146-153 (1997) |   |                       |                |                |                           |  |
|                                 | 1    | Levin et al. "Reduced g<br>Research 808(2):317-31   | 9 (1998)   |   |                       |                |                |                           |  |
|                                 |      | Levin, B. E. "Glucosen<br>S68-S72 (2001)            | _  |   | _                     |                |                |                           |  |
| Examiner                        | 123. | Lynch et al. "Localization                          |  | ene expr  |                       | n" Diabete     | s 49(5):693-7  | 700 (2000)                |  |
| Lammer                          |      |   | Date   |   |                       |                |                |                           |  |
|                                 |      | l if reference considered not considered. Include   |  |   |                       |                | ; draw line th | nrough citation if not in |  |

1-WA/2726908.1 4 of 6

| INFORMATION DISCLOSURE CITATION |                                   |                              | Attorney Docket No. <b>056291-5281</b>      |   | Application No. 10/578,021                          |  |                 |  |  |  |
|---------------------------------|-----------------------------------|------------------------------|---|---|---|--|-----------------|--|--|--|
|                                 | (Use several sheets if necessary) |                              | Applicants: CAULKETT et al.                 |   |   |  |                 |  |  |  |
|                                 |                                   | PTO Form 1449<br>May 2, 2007 |   |   | Filing Date: April 28, 20                           | 06   | Group A         | rt Unit: Unassigned                    |  |  |
|                                 |                                   |                              | U.S. PA                                     | TEN   | T DOCUMENTS   |  |                 |  |  |  |
| Initial                         |                                   | Document No.                 | Date  |   | Name  | Class  | Sub-Class       | Filing Date                            |  |  |
|                                 |                                   |                              |   |   |   |  | <u> </u>        |  |  |  |
|                                 |                                   |                              | FORFICN                                     | рат   | ENT DOCUMENTS                                       |  |                 |  |  |  |
| -                               | T                                 | Document No.                 | Date  | 1 / 1   | Country   | Class  | Sub-Class       | Translation                            |  |  |
|                                 | 1                                 |                              |   |   |   |  |                 |  |  |  |
|                                 |                                   |                              |   |   |   |  |                 |  |  |  |
|                                 | 124                               | OTHER DO                     | OCUMENTS (Included and synthesis of now     | ding  | Author, Title, Date, Pertucokinase activators" 13th | DSC SC   | ges, etc.)      | Chemistry Symposium                    |  |  |
|                                 | 124.                              | Churchill College Can        |   |   |   | NSC-SC   | i Mediciliai    | Chemistry Symposium,                   |  |  |
|                                 | 125.                              | McKerrecher et al. "D        | esign and synthesis of                      | f nov   | el glucokinase activators                           | as potent  | ial treatment   | for type 2 diabetes"                   |  |  |
|                                 | 1                                 | Frontiers in Medicinal       | Chemistry, Frankfur                         | t (Ma   | arch 2006)  |  |                 |  |  |  |
|                                 | 126.                              |                              |   |   | glucokinase activator with                          | excellen   | t in vivo effi  | icacy" Bioorg Med                      |  |  |
|                                 | 127                               | Chem Lett. 16(10):270        | )5-2709 (2006 May 1                         | 5) E <sub>1</sub>   | pub 2006 Feb 28<br>ological evaluation of nov       | اممار ماریم  | inggo gotivo    | tors" Piggra Med Chem                  |  |  |
|                                 | 127.                              | Lett. 15(8):2103-2106        |   | na bi   | ological evaluation of nov                          | ei giucok  | iliase activa   | tors Broong wied Chem                  |  |  |
|                                 | 128.                              | McKerrecher et al. "Id       | entification of orally                      | bioa  | vailable small molecule a                           | nolecule activators of glucokinase" Abstract, 12 <sup>th</sup> SCI-<br>September 2003 (poster 21) and 227 <sup>th</sup> American |                 |  |  |  |
|                                 |                                   | RSC Medicinal Chemi          | istry Symposium, Ca                         | mbri  | dge, UK, 7-10 September                             |  |                 |  |  |  |
|                                 |                                   | Chemical Society Nati        | onal Meeting and Ex                         | xposition, Anaheim, California, 28 March-1 April 2004 (paper 341)         |   |  |                 |  |  |  |
|                                 | 129.                              |                              |   | y bioavailable small molecule activators of glucokinase" Abstract, Anglo- |   |  |                 |  |  |  |
|                                 | 120                               | Swedish Medicinal Ch         | emistry Meeting (Ma                         | arch  | 2005)<br>s: ubiquitous silencing by                 | nalyaam  | ie ve hypoth    | valamic neuroendocrine                 |  |  |
|                                 | 130.                              | responses" Am I Phys         | ucose-sensing mecha<br>iol Endocrinol Metab | . 281   | (4):E649-E654 (2001)                                | agrycem  | ia vs. nypon    | ialainic neurochdocrine                |  |  |
|                                 | 131.                              | Moore et al. "Acute fr       | uctose administration                       | imp   | roves oral glucose toleran                          | ce in adu  | lts with type   | 2 diabetes" Diabetes                   |  |  |
|                                 |                                   | Care 24(11):1882-188         | 7 (2001)                                    |   |   |  |                 |  |  |  |
|                                 | 132.                              | Printz et al. "Mammal        | ian glucokinase" Anı                        | nu Re   | ev Nutr. 13:463-496 (1993                           | ) .  |                 |  |  |  |
|                                 | 133.                              |                              |   |   | new glucokinase activators                          |  |                 | myces                                  |  |  |
|                                 | 124                               | Pagers et al "Mesoior        | s and Nocardia vacci                        | nii J   | Antibiot (Tokyo) 52(3):2 inhibitors of cyclic-AMP   | nhosnho  | liesterase: a   | comparison of several                  |  |  |
|                                 | 134.                              | ring systems" J. Med.        |   |   |   | priosprio  | aresterase, a   | •••••••••••••••••••••••••••••••••••••• |  |  |
|                                 | 135.                              | Roncero et al. "Function     | onal glucokinase isof                       | orms  | are expressed in rat brain                          | " J Neuro  | ochem. 74(5)    | :1848-1857 (2000)                      |  |  |
|                                 | 136.                              |                              |   | n in h  | nypothalamic glucose-rece                           | ptive neu  | irones of obe   | ese Zucker rats" Journal               |  |  |
|                                 | 127                               | of Physiology 497.2:3        | 65-377 (1996)                               | 0.0   | ells. A model for the study                         | of other   | aluanca rog     | ulated cells in out                    |  |  |
|                                 | 137.                              | pancreas, and hypotha        |   |   |   | or other   | giucose-reg     | ulated cells ill gut,                  |  |  |
|                                 | 138.                              | Seoane et al. "Glucoki       | nase overexpression                         | resto   | res glucose utilization and                         | storage  | in cultured h   | epatocytes from male                   |  |  |
|                                 |                                   | Zucker diabetic fatty r      | ats" J Biol Chem. 27                        | 4(45)   | ):31833-31838 (1999)                                |  |                 |  |  |  |
|                                 | 139.                              |                              |   | genic   | mice are resistant to the                           | levelopm   | ent of obesit   | y-induced type 2                       |  |  |
|                                 | 140                               | diabetes" Diabetes 50(       | 3):622-629 (2001)                           | agitis  | e K+ channels in hypotha                            | lamic nei  | rone of lean    | but not obese rate"                    |  |  |
|                                 | 140.                              | Nature Neuroscience 3        |   | isitiv  | e K+ chamiers in hypotha                            | iainic nec   | itolis of icali | , out not obese rais                   |  |  |
|                                 | 141.                              | Spanswick et al. "Lept       | tin inhibits hypothala                      | mic i   | neurons by activation of A                          | TP-sensi   | tive potassiu   | m channels" Nature                     |  |  |
|                                 |                                   | 390(6659):521-525 (1         |   |   |   |  |                 |  |  |  |
|                                 |                                   |                              |   |   |   |  | - <del></del>   |  |  |  |
| Examiner                        |                                   |                              | Date (                                      | Onei  | dered   |  |                 |  |  |  |
| Lixammer                        |                                   |                              | Date  | J01131  | dorou   |  |                 |  |  |  |
| Examine                         | r: Initia                         | al if reference considere    | d, whether or not cita                      | ation   | is in conformance with M                            | PEP 609  | ; draw line th  | nrough citation if not in              |  |  |
| conforma                        | nce and                           | l not considered. Includ     | e copy of this form v                       | vith n  | ext communication to app                            | olicant.   |                 |  |  |  |

| INFORMATION DISCLOSURE CITATION |              |   | Attorney Docket No. Application No. 056291-5281 10/578,021 |              |               |                          |  |  |
|---------------------------------|--------------|---|--|--------------|---------------|--------------------------|--|--|
|                                 | (U           | se several sheets if necessary)   | Applicants: CAULKETT et al.                                |              |               |                          |  |  |
|                                 |              | PTO Form 1449<br>May 2, 2007  | Filing Date: April 28,                                     | 2006         | Group A       | rt Unit: Unassigned      |  |  |
|                                 |              | U.S. PA   | ATENT DOCUMENTS  |              |               |                          |  |  |
| Initial                         | -            | Document No. Date   | Name   | Class        | Sub-Class     | Filing Date              |  |  |
|                                 |              |   |  |              |               | 1. 100                   |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 |              | FOREIGN   | PATENT DOCUMENTS   | <del>-</del> | _             |                          |  |  |
|                                 |              | Document No. Date   | Country  | Class        | Sub-Class     | Translation              |  |  |
|                                 | -            |   |  |              | -             |                          |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 |              |   |  |              | 1             |                          |  |  |
|                                 | 1142         | OTHER DOCUMENTS (Inclu  |  |              |               | TOL I                    |  |  |
|                                 | 142.         | Velho et al. "Impaired hepatic glycogen sy 98(8):1755-1761 (1996)                   | inthesis in glucokinase-defici                             | ent (MODY    | -2) subjects  | J Clin invest.           |  |  |
|                                 | 143.         | Vertigan et al. "Impact of cell glycogen co   |  | ocyte gluco  | se metabolisi | m by pharmacological     |  |  |
|                                 | 144.         | agents" Diabetologia, Vol 47 Supp 1, A214 Yang et al. "Hypothalamic glucose sensor: |  | es from pand | reatic beta-c | ell mechanisms"          |  |  |
|                                 | 145          | Diabetes 48(9):1763-1772 (1999)  Zhang et al. "Synthesis based on affinity se       | promotion (SAS), compretion of                             | f mmoduota k | arina harbit  | unio paid too from       |  |  |
|                                 | 143.         | untagged compounds by using hydrogen be   |  |              |               | uric acid tag from       |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 |              |   |  |              | <u> </u>      |                          |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 | <del> </del> |   |  |              |               |                          |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 | -            |   |  |              |               |                          |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 | -            |   |  | ·            |               |                          |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 |              |   |  |              |               |                          |  |  |
|                                 |              |   | <del></del>  |              |               |                          |  |  |
| Examiner                        | 1            | Date (  | Considered   |              |               |                          |  |  |
| Examiner                        | : Initia     | l if reference considered, whether or not cit                                       | ation is in conformance with                               | MPEP 609.    | draw line th  | rough citation if not in |  |  |
|                                 |              | not considered. Include copy of this form v   |  |              |               |                          |  |  |

I-WA/2726908.1 6 of 6